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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,042	10/22/2003	Koji Naraoka	YKIA121870	6433

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EXAMINER

PHAM, VAN T

ART UNIT	PAPER NUMBER
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2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/692,042

Applicant(s)

NARAOKA, KOJI

Examiner

VAN T. PHAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Response to Arguments

1. Applicant's arguments filed on 11/27/2006 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-4, 6-8, 10-14 are rejected under 35 U.S.C. 102(a) as being anticipated by Hiroi Masaki (JP 2001-344788).

Regarding claim 1, see Fig. 1, discloses an objective lens drive for adjusting the tilt of an optical axis of an objective lens to be used for radiating light onto a recording medium, the drive comprising:

a lens holder for holding said objective lens (see Fig. 1, lens holder 2);

a suspension which is at one end thereof fixed to said lens holder and which supports said lens holder in a cantilever fashion (see Fig. 13, element 4);

a suspension holder for supporting the other end of said suspension (see Fig. 13, element 5); and

a plurality of multilayer piezoelectric elements which laterally support said suspension holder (see Figs. 1 and 6, element 9),

wherein at least a first of said multilayer piezoelectric elements laterally supports a first side surface of said suspension holder and at least a second of said multilayer piezoelectric

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elements laterally support a second side surface of said suspension holder opposite to said first side surface (see Figs. 1-3, 8), and

wherein said first and second multilayer piezoelectric elements are displaced in opposite directions to rotate said suspension holder about an axis extending in a direction in which said suspension extends (see Fig. 1).

Regarding claim 2, discloses the drive according to claim 1, further comprising: a guide pin for axially supporting said suspension holder in the direction in which said suspension extends (inherent).

Regarding claim 3, discloses the drive according to claim 1, further comprising: a hinge mechanism for supporting a lower section of said suspension holder (see Fig. 5).

Regarding claim 4, discloses the drive according to claim 3, wherein a recessed section is formed in the lower section of said suspension holder; and said hinge mechanism is housed within said recessed section, and an interior surface of said recessed section supports said suspension holder (see Fig. 1).

Regarding claim 6, discloses the drive according to claim 1, wherein said multilayer piezoelectric element is formed by stacking a plurality of layers in the focusing direction (see Figs. 1, 4 and [0025]).

Regarding claim 7, discloses the drive according to claim 1, wherein said multilayer piezoelectric element is a piezoelectric element of bimorph type in which layers are stacked in the focusing direction (see rejection above of claim 6 and [0056]).

Regarding claim 8, discloses the drive according to claim 1, wherein said suspension has a plurality of suspension elements which laterally support said lens holder at two different

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heights in a cantilever fashion; and said multilayer piezoelectric element supports said suspension holder at a height which is substantially halfway between said two different heights (see Fig. 1 and for the halfway between two different heights which is design choice).

Regarding claim 10, discloses the drive according to claim 9, wherein said drive means actuates a plurality of said multilayer piezoelectric elements that are to become displaced in opposite directions, to thereby rotate said suspension holder about an axis extending in the direction in which said suspension extends (see Fig. 1).

Regarding claims 11-13, see rejection above of claims 1-3, respectively.

Regarding claim 14, discloses an optical disk drive, comprising:

a lens holder for holding an objective lens to be used for converging a laser beam on an optical disk (see Fig. 1, element 2);

a suspension which is at one end thereof fixed to said lens holder and supports said lens holder in a cantilever fashion (see Figs. 1, 13);

a suspension holder for supporting the other end of said suspension (see Fig. 13);

a plurality of multilayer piezoelectric elements which laterally support said suspension holder,

at least a first of said multilayer piezoelectric elements laterally supports a first side surface of said suspension holder and at least a second of said multilayer piezoelectric elements laterally support a second side surface of said suspension holder opposite to said first side surface (see Figs. 1-3, 8) to thereby make said suspension holder rotatable about an axis extending in a direction in which said suspension extends (see Fig. 1); and

a tilt sensor for detecting the direction and magnitude of a tilt made between said optical disk and an optical axis of said objective lens (see [0008]-[0012]), wherein

at least the first and second multilayer piezoelectric elements are actuated in accordance with the magnitude and direction of tilt detected by said tilt sensor to thereby cause displacement of the multilayer piezoelectric element in a first direction and displacement of the second multilayer piezoelectric element in a second direction opposite said first direction, whereby said tilt is corrected by means of said displacements (see Figs. 1, 4, 13 and [0008]-[0012], [0026]).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroi Masaki (JP 2001-344788) in view of Sugawara (JP 09-05637).

Regarding claim 5, Hiroi discloses the drive according to claim 1, wherein said suspension supports said lens holder in a cantilever fashion so that the holder is movable in focusing and tracking directions (see Fig. 1, directions X, Y and Z).

Sugawara discloses multilayer piezoelectric element extends in a direction substantially perpendicular to the direction in which said suspension extends, to thereby support said suspension holder (see Fig. 11).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a multilayer piezoelectric element extends in a direction

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substantially perpendicular to the direction in which said suspension extends in Hiroi, as suggested by Sugawara, the motivation being in order to support suspension holder.

Regarding claim 9, Hiroi discloses the drive according to claim 1, further comprising: drive means for causing displacements in opposite directions by supplying a drive voltage to a plurality of said multilayer piezoelectric elements (inherent). However, to be obvious Sugawara discloses drive means for causing displacements in opposite directions by supplying a drive voltage to a plurality of said multilayer piezoelectric elements (see Sugawara Fig. 11 and [0050]-[0052]).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide drive means for causing displacements in opposite directions by supplying a drive voltage to a plurality of said multilayer piezoelectric elements in Hiroi, as suggested by Sugawara, the motivation being in order to cause the displacements.

Cited References

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The cited references relate to spare are with a predetermined capacity for a detective sector allocated in each zone, recording apparatus, and recording method; Information recording medium, recording apparatus, reproduction apparatus, recording method, reproduction method and defect management method.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN T. PHAM whose telephone number is 571-272-7590. The examiner can normally be reached on Monday-Friday from 9:00am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VP

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER

